AGN. NO._____

MOTION BY SUPERVISOR MICHAEL D. ANTONOVICH OCTOBER 21, 2014

CRUMB RUBBER ARTIFICIAL TURF

Recent media reports have raised questions regarding the safety of crumb rubber, a material used to make artificial turf. It is believed by some that the chemicals used to produce crumb rubber may cause cancer and other diseases. The Department of Parks and Recreation has four turf fields that utilize this material located in the following parks:

Supervisorial District 1
- Bassett Park

Supervisorial District 2
- Col. Leon H. Washington Park
- Lennox Park

Supervisorial District 3
- El Cariso Community Regional Park

I, THEREFORE, MOVE that the Board of Supervisors instruct the Acting Director of the Department of Public Health to:

1. Evaluate the health risks associated with artificial turf made from crumb rubber and provide a recommendation on its continued use in the County's parks; and

2. Provide a report of the Department's findings and recommendations to the Board in two weeks.

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Why These Goalies Are Worried About Unknown Toxins In Artificial Turf

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The distinct smell of synthetic turf on a soccer field always brings back good memories for Jordan Swarthout.

"I loved playing the sport so much," said Swarthout, 22, a former stand-out goalkeeper in Sumner, Washington, and now a graduating senior at Oregon State University.

Swarthout recalls never worrying if the fields' sometimes "heavy and stifling" smell, which people have compared to burning rubber, represented any kind of health danger -- even after her diagnosis with a rare cancer, Hodgkin's lymphoma, in January 2013. She has been in remission now for nearly a year.

But last week, she received a call from her mom. Suzie Swarthout had just watched a local Seattle news report about a number of former goalkeepers who've developed rare lymphomas in recent years, since the introduction and subsequent proliferation of artificial turf fields infilled with recycled rubber tire crumbs.

"My mom said, 'That sounds just like you,'" Swarthout recalls.

Starting in the late 1990s, a new generation of synthetic turf fields began popping up. Today, nearly 10,000 of them can be found at schools, parks and professional stadiums around the

country. The turf is designed to simulate natural grass in look and feel. Green plastic ribbons are suspended in a deep, cushioned layer of ground-up tires, so-called crumb rubber, which looks much like dirt from a distance. A kick of a soccer ball can send the black bits bouncing into the air.

In addition to keeping some 20 million used tires out of landfills every year, noted Rick Doyle, president of the Synthetic Turf Council, use of the turf boasts a number of benefits over natural grass: It requires less water and maintenance, and its superior durability allows for consistent, year-round, all-weather use for more players. Plus, parents need not worry about their children playing on grass sprayed with pesticides or fertilizers.

Doyle maintains that the turf is also safe.

"My heart goes out to anyone who has to fight a disease like this at a young age," he said, "but I think it is unfair to single out crumb rubber."

Despite no proof of a cancer link, some people remain suspicious of the synthetic surface -- among them, Amy Griffin, associate head coach of the University of Washington women's soccer team. Not enough research has been done, skeptics say, to assure the safety of players breathing in gases released from a hot field, ingesting the rubber particles or making frequent skin-to-turf contact. Common abrasions from the turf can even leave skin open to particulate from the crumbs.

Bottom line, a group of soccer players, coaches and environmental advocates around the country want to see more serious study. Many are now advocating for an online registry of soccer players with cancer to more accurately determine if they indeed experience higher cancer rates compared to the general population.

"I hope it's nothing," said Griffin, who's coached for 26 years, including 18 years at the UW, and was featured in last week's KOMO News report. Until a few years ago, she noted, she'd never heard of any players developing lymphoma.

"Now, I've heard of multiple people, and a lot are keepers," she said.

THE KEEPER'S CURSE

Much to her mother's displeasure, Swarthout would often track rubber-tire bits home from practice and games. The coarse sand-sized pellets would fall out of her equipment, socks and shorts.

"No matter how hard I tried, those little black turf things would be everywhere," said Swarthout. "They'd end up in my car, in my backpack."

It was around the eighth grade that Swarthout remembers her teams began to play regularly on artificial turf. She soon became well-acquainted with the plastic-and-rubber surface, arguably more so than her teammates who played field positions.

"A lot of practice for goalkeepers was spent doing various drills that involved diving and landing on the turf," she said. "The stuff would go in your mouth and in your gloves. And they would end up in my eyes -- that was always the worst."

Ethan Zohn echoed Swarthout on the intimate relationship between keepers and the turf, and questions whether that frequency of close contact might explain a seemingly disproportional number of cancers in the group.

Jordan Swarthout regularly played goalkeeper on synthetic turf fields. (Suzie Swarthout)

"Goalkeepers are closer to the ground, more of the time," said Zohn, 40, a former professional soccer player and winner of the reality-television series "Survivor." "Your face is in the ground, your knees are in the ground, your elbows are in the ground. Sometimes you get cut, sometimes you're eating it."

Dr. Joel Forman, a pediatrician and environmental health expert at Mount Sinai School of Medicine, said that he is not aware of evidence directly connecting cancer to such exposures to turf. He also added that a link would be "very hard to prove," given the small overall number of cases.

"Thankfully, cancer remains very rare," he said.

Zohn, like Swarthout, has played goalkeeper since he was a kid. And in 2009, he too was diagnosed with Hodgkin's lymphoma. He has twice fought back the disease, and today is cancer-free.

Also like Griffin, Zohn has accumulated a list of goalkeepers -- 50 or so -- who've battled cancer. Lymphoma, a blood cancer known to preferentially strike young adults, make up the majority of the diagnoses.

While he isn't blaming turf for his own cancer -- and he acknowledges no hard conclusions can be made from his unscientific list -- Zohn said he does worry about today's generation of players, who started playing on the surface at a younger age. Cancer can take years, even decades to develop. So, should synthetic turf prove to be a source of significant toxic exposures, it's possible that the extent of the effects may not appear for several more years.

The potential for repetitive exposure to toxic chemicals rising as dust or gas from the tiny rubber crumbs is most concerning to Zohn. While playing soccer, he noted, a person is likely to be breathing heavily and taking in large amounts of air.

Many state laws prohibit burning tires, or even disposing them in a landfill, due to potential releases of toxic chemicals. And researchers have found at least small amounts of toxins may be released from crumb rubber, especially on hot days. Whether the potential levels of exposure actually pose health risks is "debatable," according to Forman.

Griffin recalled one 82-degree day during a UW summer soccer camp, when someone stuck a thermometer into the field turf. Three-quarters of an inch down, she said, it registered over 200 degrees Fahrenheit.

"You can smell it when it's hot. If it is too toxic to burn," she said, referring to the state laws against burning tires, "you can't imagine it's just fine lying around."

TOXIC TURF?

Forman cautioned that, while high temperatures can put soccer players at risk of heat stroke and dehydration, a bad smell does not necessarily indicate a health hazard. And of course some toxic gases carry no odor at all.

"You can't go by your nose," said Forman.

Overall, he said, there's "not a lot of health information" regarding toxic exposures from crumb rubber -- starting with the uncertainty over just what chemicals the pellets contain.

A Swedish report found 60 different substances in automobile tires, including plasticizers, carbon black, polyaromatic hydrocarbons and small amounts of heavy metals, such as lead. But tires vary significantly in their composition, which makes it all the more unclear as to what chemicals may be present in the 40,000 ground-up tires that fill the average synthetic field. Even identifying what risks the known chemicals may pose is difficult due to the U.S. government's current 'innocent until proven guilty' regulatory strategy. More than 80,000 chemicals permitted for use in the country have never been fully tested for toxicity to humans, let alone children or fetuses.

Kids tend to spend more time than adults on the ground, accumulating exposures, noted Forman. And a developing child is also generally more vulnerable to toxic chemicals.

"For adults, the exposure risk is probably quite low, and may be outweighed by the benefits of the reliable and fast surface," said Forman. He's not so sure the risks outweigh the benefits for children, however.

Swarthout's generation began their early soccer careers before the advent of crumb rubber. She recalled starting at the age of 3, playing on grass. But many children of the same age today are running, sliding and diving on artificial turf.

"We're using these little kids as guinea pigs," said Zohn, who is among those advocating for an online registry to track soccer players with cancer. He hopes that ultimately researchers can prove the turf is safe.

Doyle, of the industry group, said he's not opposed to additional research. But he added that he thinks there's "plenty of research out there to answer most of the skeptics." Fifteen independent studies, he said, "all validate the human health and environmental safety of synthetic turf and crumb rubber."

David Brown, director of public health toxicology for Environment and Human Health, Inc., a nonprofit environmental health group, comes to a different conclusion based on the current evidence.

"I wouldn't put a child on one of these fields," said Brown, who authored an early crumb rubber report published by the group in 2007, which warned of potential health risks, such as cancer and skin, eye and respiratory irritation.

Crumb rubber up close. (Lynne Peeples)

He criticized the industry with overhyping small studies, some of which they funded, and misinterpreting others. Authors of an EPA report, for example, called their own study "very limited" due to a small number of chemicals monitored and field samples taken.

"It's clear that carcinogens are present," Brown said, pointing to carbon black and butylated hydroxyanisole, among other known cancer-causing chemicals in crumb rubber.

Despite the lingering uncertainty, Brown suggested enough is known at least to take greater precautions. Goalkeepers should practice on natural grass, even if their games are on an artificial surface, he said. And all players should take off their shoes, in addition to washing their hands, when leaving a turf field.

"How did this happen?" Brown asked. "How did we end up with children playing on fields that we know have carcinogens in them?"

http://www.huffingtonpost.com/2014/05/30/artificial-turf-cancer-rubber-tires_n_5412140.html